

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9, 11-12, 14-24, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antoniadis or Wan or Hsieh.

Antoniadis discloses the chloride polymer of DP-PPV prepared from the polymerization of 1,4-bis(chloromethyl)-2,3-diphenyl benzene in the presence of a base such as t-BuOK wherein the phenyl monomer has adjacent substituents on the phenyl residue and are in the 2-position and the 3-position of the phenylene residue, and having the electroluminescent characteristic (see Figure 2)

Wan discloses the polymerization of 1,4-bis(chloromethyl)-2,3-diphenyl benzene in the presence of a base such as t-butoxide to give the chlorine polymer of DP-PPV (See Abstract and in Scheme 1) having photoluminescent and electroluminescent characteristics.

Hsieh discloses the polymerization of 1,4-bis(chloromethyl)-2,3-diphenyl benzene in the presence of t-BuOK to form poly(2,3-diphenyl-p-phenylene vinylene) (see col. 33, Example 6) having the electroluminescent characteristic.

The disclosure of the references differ from the instant claims in that they do not disclose the broad teachings of the claimed formulas causing the blue shift in the photoluminescence and/or electroluminescence of the compounds.

However, the references do disclose specific formulas of the compound, having the claimed adjacent substituents and the claimed characteristics. Further, the references do disclose the required reactants and steps of the process in claim 14.

Therefore, it would have been obvious to one of ordinary skill in the art to select the reactants and the conditions from the references within the limitations of the instant claims since they have been shown to be effective in a similar system and thus would have been expected to provide adequate results. There is no showing of unexpected results derived from said selections.

Applicant's arguments are based on the claimed soluble characteristic based on molar ratios of the reactants. Said arguments have been fully considered but they are not persuasive since the instant claims do not disclose any molar ratios at all.

Applicant's arguments are also based on the claimed steps of the processes. They are not persuasive since they are not commensurate in scope with the claims.

The requirements for the claimed method 14 is polymerizing a bis(halomethyl) substituted phenyl monomer in the presence of a base to form a poly(arylene vinylene) wherein the phenyl monomer has adjacent substituents on the phenyl residue.

The references clearly disclose these, as stated above.

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 32 is allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Truong whose telephone number is 703-308-2437. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703-308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9781 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



DT
June 9, 2003

DUCTRUONG
PRIMARY EXAMINER

Continuation of 5. does NOT place the application in condition for allowance because: for the reasons as stated in the last Office action Applicant's arguments are based on the combination of factors to determine whether the compound is soluble, such as the nature of each of the "adjacent substituents", on the phenylene vinylene unit, the nature of any repeat units in the polymer backbone other than the phenylene vinylene units. Said arguments have been fully considered but they are not persuasive since the references do disclose the identical components with that of the claims. Further, the use of the term "soluble or insoluble" in this particular case does not mean anything since it raise an issue "is it soluble or insoluble in what? in water or in organic solvent. Further, a question is raised why. Applicant's response to this question by presenting a diagram to show the one step process shown in part C exemplifies a compound having the soluble characteristic. That means this characteristic is based on the steps of the process. However, the references do disclose the requirements for the claimed composition/processes, as stated in the last Office action.

DUCTRUONG
PRIMARY EXAMINER

Advisory Action

Application No.

09/529,873

Applicant(s)

HOLMES ET AL.

Examiner

Duc Truong

Art Unit

1711

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED**FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.**

Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☒ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: they present additional claim 32 without canceling claim 13.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: none.

Claim(s) objected to: 13.

Claim(s) rejected: 1-7, 9, 11-12, 14-24, and 30-31.

Claim(s) withdrawn from consideration: _____.

8. ☐ The proposed drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____